Welcome to the 3rd Annual Meeting of the US DOHaD Society

U.S. DOHaD Society

October 1-2, 2018

The Rizzo Center

Chapel Hill, North Carolina

Scientific Chair: Dr. Robert Lane

http://usdohad.org/

DAY 1 MONDAY October 1st

(NOTE: There are 2 Rooms running parallel sessions after the "Welcome" on Day 1.***)***

Magnolia - ROOM 1 Trainee Session

7:00 – 7:10 AM Welcome to the Trainees by the Mentoring Volunteers

7:10 – 7:25 AM Specific Aim Craftsmanship

7:25 – 8:30 AM Specific Aim 'Speed Dating' Reviews

8:30 – 8:45 AM Coffee Break

*****Magnolia - ROOM 1 – MEETING KICKOFF*****

8:45 – 9:15 AM Introduction by Dr. Ross (President of DOHaD) and Representative from NIEHS

9:15 – 9:30 AM Coffee Break / Socialize / Pick your Room

Magnolia - ROOM 1 – Start of Parallel Sessions

9:30 – 11:30 AM Theme 1: Microbiome and Developmental Origins of Health and Disease

Kjersti Aagaard MD PhD (Professor and Vice Chair of Research at the Baylor College of Medicine, Henry and Emma Meyer Chair of Obstetrics and Gynecology): ***The Perinatal Microbiome Microbial Programming for Future Health*** *(9:30 – 10:15)*

Abstract 1: (10:15 – 10:30)
RID14
Bangma, Jacqueline
University of North Carolina at Chapel Hill
Prenatal Antecedents of Positive Child Health Index (PCHI) Among 10 Year Old Children Born Extremely Preterm

Abstract 2: (10:30 – 10:45)
RID34
Adair, Linda
University of North Carolina at Chapel Hill
Does Faster Post-Malnutrition Infant Growth Heighten Risk of Excess Adiposity in Adulthood?

Abstract 3: (10:45 – 11:00)
RID23
Varberg, Kaela
University of Kansas Medical Center
Integration of in Vitro and in Vivo Models to Identify Conserved Mechanisms Regulating Development of the Invasive Trophoblast Lineage at the Maternal Fetal Interface

Abstract 4: (11:00 – 11:15)
RID27
Pinney, Sara
The Children's Hospital of Philadelphia
Fetal Programming in Gestational Diabetes and Maternal Obesity: Are miRNAs Key Epigenetic Modifiers or Biomarkers of an Altered Intrauterine Milieu

Abstract 5: (11:15 – 11:30)
RID2
Bommarito, Paige
University of North Carolina at Chapel Hill
Placental Cadmium, Zinc and Selenium Levels are Associated with Placental Expression of miRNAs Targeting the TGF-β Pathway in the MOTOR Birth Cohort

11:30 – 1:30 PM Buffet Lunch (11:30 to approximately 12:15)
POSTER SYMPOSIUM SESSION - Magnolia Room
Poster 2 Minute Overviews (12:15 – 1:00)
Poster Viewing and Leg Stretch (1:00 – 1:30)

1:30 – 3:30 PM Theme 1 (continued): Microbiome and Developmental Origins of Health and Disease

Nita Salzman PhD (Professor of Pediatrics, Microbiology and Immunology, Associate Director of the Medical Scientist Training Program, Medical College of Wisconsin): ***Genetics, Environment and the Microbiome: Implications for Human Health and Disease*** *(1:30 – 2:15)*

Abstract 6: (2:15 – 2:30)
RID50 **Kassem, Zeinab**
Henry Ford Health System
Association of the Early Life Gut Microbiota with Neurodevelopmental Disorders

Abstract 7: (2:30 – 2:45)
RID48 **Waterland, Robert**
Baylor College of Medicine
Epigenetic Supersimilarity of Monozygotic Twins: Implications for DOHaD

Abstract 8: (2:45 – 3:00)
RID16 **Huang, Madelyn**
University of North Carolina at Chapel Hill
Prenatal Arsenic Exposure and Dietary Folate and Methylcobalamin Supplementation Alter the Metabolic Phenotype of C57BL/6 Mice in a Sex Specific Manner

Abstract 9: (3:00 – 3:15)
RID71 **Fuemmeler, Bernard**
Virginia Commonwealth University
Prenatal Cotinine Concentration in Plasma Among Non-Smoking Pregnancy Women is Associated with Offspring Umbilical Cord Blood DNA Methylation: An Epigenome Wide Study

Abstract 10: (3:15 – 3:30)
RID24 **Cardenas, Andres**
Harvard Medical School and Harvard Pilgrim Health Care Institute
Placental DNA Methylation as a Mediator for the Association of Prenatal Smoking and Infant Birth Weight

3:30 – 3:45 PM Coffee Break

3:45 – 6:30 PM Theme 2: Programming and Metabolomics

Laura Brown MD: ***Reduced Skeletal Muscle Growth in IUGR A Metabolomics Approach to Understanding Mechanism*** *(3:45 – 4:30)*

Abstract 11: (4:30 – 4:45)
RID55 **Osataphan, Soravis**
Joslin Diabetes Center
SGLT2 Inhibition Reduces Paternal Intergenerational Transmission of Metabolic Disease in Mice with Dietary Obesity

Abstract 12: (4:45 – 5:00)
RID75 **Kua, Lim**
Indiana University School of Medicine
Reg3g Mediates Pancreatic Islet Dysfunction in Offspring Exposed to In-Utero Hyperglycemia

Abstract 13: (5:00 – 5:15)
RID51 **Jones, Amanda**
University of Colorado School of Medicine
Late Gestation Hypoxia Increases Norepinephrine and Gluconeogenic Gene Expression to Potentiate Hepatic Glucose Production in Fetal Sheep

Coffee Break (5:15 - 5:30)

Kari Nadeau MD PhD (Professor of Pediatrics – Allergy and Clinical Immunology – Stanford University School of Medicine, Naddisy Family Foundation Chair, Director of the Sean N Parker Center for Allergy and Asthma Research): ***Knowledge of Pathways Causing Allergies Lead to Roads to Prevention*** *(5:30 – 6:15)*

ROOM 2 – Start of Parallel Session

9:30 – 11:15 AM Theme 3: Endocrine Disrupting Chemicals and Developmental Origins of Disease

Heather Patisaul PhD (Professor of Biological Sciences, North Carolina State University): ***Prenatal Pollution: Endocrine Disruption of the Placenta and Neurodevelopment*** *(9:30 – 10:15)*

Abstract 15: (10:15 – 10:30)
RID8 **McCoy, Krista**
East Carolina University
Investigating a Preventative Therapy to Reduce Endocrine Disruption

Abstract 16: (10:30 – 10:45)
RID11 **Chou, Fu-Sheng**
University of Kansas Medical Center
The Impact of Placental Insufficiency on Fetal Cerebral Cortex Development

Abstract 17: (10:45 – 11:00)
RID9 **Ke, Xingrao**
Medical College of Wisconsin
Adverse Maternal Environment Increases the Expression of Glucocorticoid Receptor and Decreases DNA Methylation at Exon 1F Promoter in Male Mouse Hippocampus

Abstract 18: (11:00 – 11:15)
RID35 **Appleton, Allison**
University at Albany School of Public Health
Gestational HPA-Related DNA Methylation is Associated with Maternal Adverse Childhood Experiences, Depression During Pregnancy and Child Growth and Neurobehavior at 24 Months

11:15 – 1:30 PM Buffett Lunch (11:15 to approximately 12:15)
POSTER SYMPOSIUM SESSION – Magnolia Room
Poster 2 Minute Overviews (12:15 – 1:00)
Poster Viewing and Leg Stretch (1:00 – 1:30)

1:30 – 3:30 PM Theme 3 (continued): Endocrine Disrupting Chemicals and Developmental Origins of Disease

Raquel Chamorro-Garcia PhD (Postdoctoral Scholar, Department of Developmental and Cell Biology, University of California Irvine): ***Obesogens and Obesity: Mechanisms of Transgenerational Inheritance*** *(1:30 – 2:15)*

Abstract 19: (2:15 – 2:30)
RID17 **Kwiatkowski, Carol**
The Endocrine Disruption Exchange
Environmental Chemicals and Autism: A Scoping Review of the Human and Animal Research

Abstract 20: (2:30 – 2:45)
RID30 **Salafia, Carolyn**
Institute for Basic Research, Placental Modulation Laboratory
Environmental Influences on Placental Origins of Development: Post-Industrial Heavy Metals Exposures and Childhood Growth in Brooklyn

Abstract 21: (2:45 – 3:00)
RID32 **Blake, Bevin**
National Institute of Environmental Health Sciences
An in Vitro Screen of a Panel of Perfluroalkyl Substances and an in vivo Assessment of Effects on Placental and Fetal Growth

Abstract 22: (3:00 – 3:15)
RID68 **Kodavanti, Urmilia**
EPA
The Influence of Maternal Fat Diet and Ozone Exposure on Serum Metabolomic Profiles in Juvenile Offspring

Abstract 23: (3:15 – 3:30)
RID46 **Stewart, Erica**
ORISE / EPA
Gestational Exposure to Ozone Results in Hepatic and Systemic Metabolic Perturbations in Male Rat Offspring

3:30 – 3:45 PM Coffee Break

3:45 – 6:30 PM Theme 4: Environmental Epigenomics and Cellular Models of Developmental Origins of Health and Disease

John Greally DMed, PhD, FACMG (Professor of Genetics, Medicine and Pediatrics, Director of the Albert Einstein Center for Epigenomics, Albert Einstein College of Medicine): ***Cellular and molecular models for epigenetic studies of human diseases*** *(3:45 - 4:30)*

Abstract 24: (4:30 – 4:45)
RID59 **Hoffman, Kate**
Duke University
Prenatal Exposure PBDE, PFASs and Pesticide and Associations with Birthweight and Gestational Length

Abstract 25: (4:45 – 5:00)
RID33 **Hauser, Russ**
Harvard T.H. Chan School of Public Health
Maternal Preconception and Prenatal Phenol and Phthalate Metabolite Urinary Concentrations and Risk of Preterm Birth: Exploring Windows and Vulnerability

Abstract 26: (5:00 – 5:15)
RID20 **Gaston, Symielle**
National Institute of Environmental Health Sciences
The Association between Birthweight and Obesity may Vary by Low Molecular Phthalate Metabolite Concentrations among US Adolescents

Abstract 27: (5:15 – 5:30)
RID26 **Bellavia, Andrea**
Harvard T.H. Chan School of Public Health
Quantifying the Contribution of Environmental Factors in Perinatal Health Disparities: A Conceptual Model

Coffee Break (5:30 – 5:45)

Abstract 28: (5:45 – 6:00)
RID67 **Bansal, Amita**
University of Pennsylvania, Center for Research and Reproduction and Women's Health, Center of Excellence in Environmental Toxicology, Perelman School of Medicine
Effects of Maternal Bisphenol A Exposure on Immune Response in Offspring Pancreas

Abstract 29: (6:00 – 6:15)
RID38 **Allardice, Heather**
North Carolina State University
The Effect of Gestational Exposure to Bisphenol A on Extinction Behavior in Mice

Abstract 30: (6:15 – 6:30)
RID29 **Levin, Edward**
Duke University Medical Center
Paternal THC Exposure in Rat Impacts Neurobehavioral Effects in the Offspring

6:30 PM ***ALL PARTICIPANTS Strolling Dinner – Rizzo Center***
Included with Registration

DAY 2 Tuesday, October 2nd

7:00 – 7:45 AM Career Strategy Questions and Specific Aim 'Speed Dating' Reviews if Time Allows

7:45 – 8:00 AM Coffee Break

8:00 – 10:00 AM Theme 5: Environmental Exposures and ECHO Program Abstracts

Robert O. Wright MD MPH (Ethel H Wise Professor and Chair, Department of Environmental Medicine and Public Health, Director, Lautenberg Laboratory for Environmental Health, Icahn School of Medicine at Mount Sinai): ***Epigenomics: A Transformational Paradigm for Discoveries of Novel Therapies*** *(8:00 – 8:45)*

ECHO Abstract 1: (8:45 – 9:00)
RID43 **O'Connor, Tom**
University of Rochester
Placental Correlates of Prenatal Risk

ECHO Abstract 2: (9:00 – 9:15)
RID42 **Litonjua, Augusto**
University of Rochester Medical Center (ECHO Cohort)
Prenatal Vitamin D Supplementation and Offspring Asthma and Lung Function

ECHO Abstract 3: (9:15 – 9:30)
RID62 **Starling, Anne**
University of Colorado Anschutz Medical Campus
Prenatal Exposure to Traffic Related Air Pollution and Offspring Adiposity at Birth and at 5 Months of Age: The Healthy Start ECHO Cohort

ECHO Abstract 4: (9:30 – 9:45)
RID69 **Oken, Emily**
University of Tennessee Health Science Center
Childhood Obesity in the NIH Environmental Influences on Child Health Outcomes (ECHO) Initiative

ECHO Abstract 5: (9:45 – 10.00)
RID74 **Huddleston, Kathi**
Inova Translational Medicine Institute
Identification of Microbiome and Clinical Influences Related to Very Early Childhood Obesity

10:00 – 10:15 AM Coffee Break

10:15 – 11:45 AM Theme 6: Environment – Genome Interactions

Lisa Joss-Moore PhD (Associate Professor of Pediatrics, Department of Pediatrics, University of Utah): ***Perinatal Lipids and the Programming of Lung Disease*** *(10:15 – 11:00)*

Lubo Zhang PhD (Professor of Physiology and Pharmacology, Director of the Lawrence D Longo MD Center for Perinatal Biology, Loma Linda University School of Medicine): ***The Environment-Genome Interplay and the Emergence of Neuroepigenetics*** *(11:00 – 11:45)*

11:45 – 1:30PM Buffet Lunch (11:15 to approximately 12:15)
POSTER SYMPOSIUM SESSION
Poster 2 Minute Overviews (12:15 to 1:00)
Poster Viewing (Author Attendance) and Leg Stretch (1:00 to 1:30)

1:30 – 2:00 PM **BUSINESS MEETING**
- Elections
- Bylaws
- Council Updates
- Future Meetings

2:00 – 3:00 PM Theme 7: Epigenomics and Therapies

Raul Urrutia MD (Professor of Surgery and Biochemistry, Warren P Knowles Endowed Chair of Genomics and Precision Medicine, Director, Genomics Sciences and Precision Medicine Center, Director Development Therapeutic Program Cancer Center, Chief-Scientific Officer, Cancer Epigenetic Society, Medical College of Wisconsin): Epigenomics: ***A Transformational Paradigm for Discoveries of Novel Therapies*** *(2:00 – 2:45)*

3:00 – 3:15 PM Coffee Break

3:15 – 4:45 PM Theme 8: Environment, Programming and Disparities

Chandra L Jackson PhD MS (Earl Stadtman Investigator, Epidemiology Branch, Social and Environmental Health Sciences, National Institutes of Health): ***Interconnected Social and Environmental Factors Shaping Health Disparities across the Lifecourse: The Sleep Example*** *(3:15 – 4:00)*

Catherine Hoyo PhD MPH (Professor of Biological Sciences, Director of Epidemiology and Environmental Epigenomics Laboratory, Center for Human Health and the Environment, North Carolina State University): ***Using Epigenetics to Predict the Epidemiology of Obesity Related Chronic Diseases of Adulthood*** *(4:00 – 4:45)*

4:45 – 5:00 PM Closing Remarks and Awards

POSTER SYMPOSIUM SESSION DAY 1 October 1st

1. RID75 **Delker, Erin**
University of California, San Diego
Infancy Weight Gain and Adiposity in Young Adulthood: Evidence from Santiago, Chile

2. RID36 **Malmborg, Abigail**
East Carolina University
Preventing the Developmental Origins of Disease

3. RID44 **LaBarre, Jennifer**
University of Michigan
Relationship Between Maternal Nutrient Exposure and Intrauterine Growth, Birth Weight and the Cord Blood Metabolome

4. RID65 **Gingras, Veronique**
Harvard Medical School and Harvard Pilgrim Health Care Institute
Mid-Pregnancy Fructosamine Levels and Infant Size at Birth

5. RID41 **Hurley, Edward**
University of Pittsburgh
In-Utero Nutrient Deprivation Modifies Hepatic Gene Expression in a Sex Specific Manner in Rats

6. RID60 **Jansen, Erica**
University of Michigan
Sleep Duration is Associated with Leukocyte DNA Methylation in a Sample of Mexican Adolescents

7. RD63 **Kassotis, Christopher**
Duke University
Thyroid Receptor Antagonism as a Contributory Mechanism for Indoor House Dust Extract Induced Adopgenesis in 3T3 – L1 Cells

8. RID64 **Golden, Thea**
University of Pennsylvania
Altered Immune Populations Following IUGR in the Neonatal Rat

9. RID76 **Puttabyatappa, Muraly**
University of Michigan
Gestational Testosterone Excess Programs Adipose Depot Specific Inflammatory State in the Female Sheep

10. RID22 **Majnik, Amber**
Medical College of Wisconsin
Adverse Maternal Environment Intensifies the Damaging Effects of a Western Diet in Offspring

11. RID57 **Chang, Eileen**
University of Colorado School of Medicine
Reduced Skeletal Myoblast Proliferation, Differentiation, and Fusion into Myonuclei Results in Decreased Total Myofiber Number and Size in Intrauterine Growth Restricted Fetal Sheep

12. RID7 **Miller, Collete**
US Environmental Protection Agency
Acute Exposures, Lifelong Consequence: Ozone Inhalation During Implantation Receptively Alters Energy Balance in Offspring

13. RID10 **Paulsen, Megan**
University of Minnesota
Maternal Hypercholesteremia is Associated with Decreased Appetite Signaling in the Developing Brain

14. RID47 **Rock, Kylie**
North Carolina State University
Sex-Specific Placental Accumulation of the Flame Retardant Mixture FM550 and Sex-Specific Disruption of the Placental and Fetal Forebrain Transcriptome in the Wistar Rat

15. RID49 **Gillera, Sagi**
North Carolina State University
Exploring the Impact of Developmental Exposure to the Flame Retardant Mixture Firemaster 550 (FM550) on Social Behavior Health Using a Prosocial Animal Model

16. RID4 **Aris, Izzuddin**
Harvard Medical School and Harvard Pilgrim Health Care Institute
Patterns of Body Mass Index Milestones in Early Life and Cardio-Metabolic Risk in Early Adolescence

17. RID70 **Hindman, Andrea**
Silent Spring Institute / Northeastern University
Measures of Breast Cancer Susceptibility Following Early Life Chemical Exposures are Prioritized in Toxicity Testing using the Adverse Outcome Pathway Framework

18. RID53 **Abdallah, Sarah**
CUNY College of Staten Island
Developmental Pb^{2+} Exposure Induces ASD Relevant Behaviors in Planarians

POSTER SYMPOSIUM SESSION DAY 2 October 2nd

19. RID12 **Bommarito, Paige**
University of North Carolina at Chapel Hill
Urinary Metals and Pre-Eclampsia in the LIFECODES Birth Cohort

20. RID66 **Meyrueix, Laetitia**
University of North Carolina – Chapel Hill, Nutrition Department
Relationship Between Placental Metal Levels and Birth Outcomes in a Cohort Enriched for Gestational Diabetes

21. RID45 **Guillette, Theresa**
North Carolina State University
Gestational Exposure to Low Doses of Cadmium Sex Specifically Alters Liver Transcriptome in Adult CD-1 Mice

22. RID56 **Jackson, Thomas**
North Carolina State University
Gestational Cadmium Exposure Modifies Metabolic Response in Female CD-1 Mice

23. RID3 **Aylor, David**
North Carolina State University
Gene x Environment Interactions Cause Sperm Decline and Male Infertility in Mice

24. RID61 **Schrott, Rose**
Duke University
Cannabis Use is Associated with Loss of Methylation at DLGAP2 in Human Sperm

25. RID13 **Gaballah, Shaza**
ORISE/US EPA
Exposure to PFOS, PFHxS, or PFHxA, but not GenX, ADONA, Nafion BPI or PFOA, Elicits Developmental Neurotoxicity in Larval Zebrafish

26. RID21 **Gaston, Symielle**
National Institute of Environmental Health Sciences
Chemical Hair Product Usage and Physical Activity in Childhood and Adulthood among African-American Women

27. RID40 **Mao, Jiude**
University of Missouri
Effects of Bisphenol A and Bisphenol S Exposure on Metabolism and Voluntary Physical Activity

28. RID77 **Rashid, Cetewayo**
University of Pennsylvania, Perelman School of Medicine
Paternal bisphenol A exposure alters offspring glucose tolerance in a time and sex specific manner

29. RID31 **Ferguson, Kelly**
National Institute of Environmental Health Sciences
Organophosphate Pesticide Exposure in Pregnancy and Fetal Growth

30. RID5 **Aris, Izzuddin**
Harvard Medical School and Harvard Pilgrim Health Care Institute
Early Life Predictors of Systolic Blood Pressure Trajectories: Findings from Project Viva

31. RID72 **Xue, Jing**
University of North Carolina – Chapel Hill
Parent of Origin Specific Genome Wide Epigenetic Response to Developmental Vitamin D Depletion in Mouse

32. RID52 **Neier, Kari**
University of Michigan School of Public Health, Department of Environmental Health Sciences
Lifecourse Metabolic Impacts of Perinatal Exposure to Phthalates and Phthalate Mixtures

33. RID37 **McCabe, Carly**
University of Michigan
Fetal Epigenetic Reprogramming in Response to Early-Life Exposures: Maternal Exposure to Phenols

34. RID54 **Vester, Aimee**
Emory University Rollins School of Public Health
Neurodevelopmental Pyrethroid Insecticide and Stress Hormone Exposure in Mice Affects Dopaminergic Pathways Relevant to ADHD

35. RID28 **Hawkey, Andrew**
Duke University Medical Center
Prenatal Nicotine Exposure in Rats Produces Neurobehavioral Effects in the Offspring

36. RID58 **Joglekar, Rashmi**
Duke University
Developmental Nicotine Exposure Attenuates Female Sex Behavior

37. RID73 **Khambadkone, Seva**
Johns Hopkins University School of Medicine
Perinatal High Fat Diet Alters the Developmental Trajectory and Structure of Trabecular Bone in Rat Offspring

38. RID15 **Fu, Qi**
Medical College of Wisconsin
Hepatic and Circulating Cholesterol Increase Following Exposure to an Adverse Maternal Environment

39. RID77 **Tal, Tamara**
EPA
Triclosan-resistant host-associated microbiota perform xenobiotic biotransformations in larval zebrafish

40. RID18 **Hipwell, Alison**
University of Pittsburgh
Modifying the Prenatal Stress Response in Low Income Women with Fatty Acid Supplementation

41. RID39 **Rice, Brittany**
University of Kentucky
Protective Effects of Maternal Exercise on Male Offspring Born to Mothers Exposed to Polychlorinated Biphenyl 126 (PCB126)

This meeting has been supported by the following institutions:

The National Institute of Environmental Health Sciences Grant R13ES029036

2018 US DOHaD Trainee Award Winners

Erin Delker
Thea Golden
Zeinab Kassem
Seva Khambadkone
Kari Neier
Soravis Osataphan
Brittany Rice
Kaela Varberg

The meeting organizers wish to recognize the following individuals for their invaluable contributions to the success of this meeting:

Chad Coleman, MPH
Jennifer Sabree
Stephanie Klomsten
Michelle Gall
Beth Stewart
and local host Dr. Jerrold Heindel

The United States Developmental Origins of Health and Disease Society was founded in 2016 and is an affiliate of the International DOHaD Society. Our organization is focused on all facets of the study of the fetal origins and early life programming of health and disease. While our primary focus is to promote the research principles of DOHaD, we also strive to support trainees and early career investigators in their scientific and professional development.

US DOHaD Officers 2018-2020
President: Robert Lane (2018-2020)
Immediate Past-President: Michael Ross (2018-2020)
Secretary: Mina Desai (2016-2020)
Treasurer: Ganesa Wegienka (2016-2020)
Council: Sara Pinney and Kaela Varberg (Trainee Representative) (2018-2020)

Nominations will be accepted in early 2019 for 2019-2021 Council membership.

Please join the US DOHaD Society as a member. Benefits include:
1. Membership in the International DOHaD Society
2. Discounted registration for the US DOHaD Annual Meeting
3. Voting rights in the US DOHaD Society
4. Free access to journal (J DOHaD)
5. Voting privileges for bylaws and elections
6. Opportunity to serve on council or elected office

Membership is for the calendar year.
http://usdohad.org/membership/

We look forward to seeing you again in 2019 for the 4th Annual Meeting of the US DOHaD Society.

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